intercom

Journal of the Air Force C4ISR community ★ August 2006

Aircrew Communications

KEEPING THE AIR FORCE CONNECTED FROM THE GROUND TO THE STRATOSPHERE

WARFIGHTING INTEGRATION ★ ON THE EDGE OF SPACE ★ JSTARS

GOING DIGITAL ★ GOING VIRTUAL ★ A ROOM WITH A VIEW

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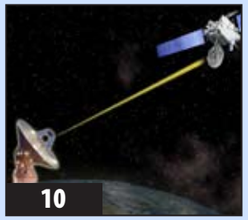

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MAGAZINE AWARDS

2005
Best Magazine
DoD's Thomas Jefferson Awards program & Air Force Media Contest

2003/2004
Most Improved Magazine
Clarion Award * Women in Communications

Award of Excellence – Internal Magazine
NAGC Blue Pencil Competition

Best Online Newspaper
Air Force Media Contest

Best Designed Publication
DoD's MILGRAPH Competition

21ST CENTURY AIR FORCE

LETTERS TO THE EDITOR

On target graphics

I checked out my office's subject article on the Air Force Communications Agency's Internet for the July issue and must say it looks fantastic! The graphics are right on the mark for such a story. My only note is that Internet Protocol version 6 is abbreviated IPv6, not IP v.6 as stated in the Jargon Watch. Keep up the great work!

—Tom Korte
Air Force Communications Agency

'You look marvelous'

Kudos to the *intercom* staff for producing such a fabulous edition (July) focusing on our Information Managers. As always, you've produced a first-rate publication. Best wishes.

—Chief Master Sgt. Brian L. Hale
Information Manager and Postal Career Field Manager

Say what?

In the 1993-94 time frame, the SC community "took over" data management from information managers.

Reasoning was the SC community felt the IM community was moving too slow in standardizing data terms so that any item had only one way of being represented.

Such standardization was necessary to ensure no matter what the electronic data base, there was only one correct way to enter dates, times, and so many, many other data terms.

"Teaching IM About Excellence in the Written Word" in the July issue of the *intercom*, with its statement about, "….only one way to abbreviate Lieutenant Colonel in the U.S. Air Force, and that's Lt Col," and then showing how other services abbreviate the same item, shows that we still have a long way to go in standardizing Department of Defense named items.

—Retired Maj. David K. Wall

JAG IN A BOX

Official wireless

I'm told that there are restrictions on using appropriated funds to provide communications connectivity to quarters, and that wireless is a way around the restrictions — is that true?

Fritz Mihelcic
AFCA Deputy Chief Counsel

At the present time, the law strictly limits use of appropriated funds to provide connectivity to quarters. When it comes to provision of "fixed" communications support, the law limits it to quarters where the occupant has command and control authority. Recent law also restricts the source of funds to MILCON or Military Treatment Facilities and limits the amount we can spend. Wireless, or portable comm, may avoid these restrictions. Bases may not install wireless for the primary purpose of providing connectivity to those who do not qualify for "comm to quarters" under the current law. However, if there is a legitimate base operation that uses wireless, and there happens to be quarters in the "footprint" of the wireless access point, then they may use the TCP/IP connection without running afoul of the legal restrictions.

Security rules would apply, and the connectivity could only be used for official purposes. Wireless as part of a legitimate CITS initiative may also extend support to the commander's staff.

If you have questions, please contact our office.

Send in your question to:
AFCA-JA@scott.af.mil
or call DSN: 779-6060

REAPING BENEFITS WITH WARFIGHTING INTEGRATION

8 15

READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

Technology is providing capabilities to operators that could never have been imagined in the past.

JARGON WATCH

- **IT**: Information Technology
- **JEFX**: Joint Expeditionary Force Experiment
- **Thumping**: When data comes in via telephone or hard-copy message and then must be input into a new system.

By Staff Sgt. C. Todd Lopez
Air Force Print News

ARLINGTON, Va. — Over the next decade, the Air Force will continue to use information technology to leverage the capability of its people and weapons systems.

During a conference here in June, Lt. Gen. Michael W. Peterson, Air Force Chief of Warfighting Integration and Chief Information Officer, told members of the civilian information technology industry about the Air Force's success in employment of IT and its plans for the future.

General Peterson said the Air Force already had stealthy, precise weapons systems and the best Airmen in the world, but by adding IT to that mix, the service was able to make its assets more efficient and powerful. The concept of using IT to reap greater benefits from Air Force weapons and people is warfighting integration.

One example of warfighting integration is the link between ground troops and airborne intelligence, surveillance and reconnaissance platforms such as the MQ-1 Predator unmanned aerial vehicle.

"Today, (a) Soldier, Marine or an Airman on the ground can look at a terminal and watch what a Predator is observing from overhead," General Peterson said. "(They) can also talk to an AC-130 gunship. The gunship can see what is happening on the Predator. Before it even arrives on scene, the gunship has situational awareness. This has changed things dramatically."

In the past, information did not move seamlessly between sensor and operator, or computer to computer. Data had to be moved on paper or by telephone, and then keyed back into a new system — a process informally referred to as "thumping." That made for inefficiencies and inaccuracies, the general said.

The Air Force needed to find ways to move that data machine-to-machine, and take the human element out of the picture wherever possible. The general said the Air Force cannot afford to wait for data to be "thumped" into a system any longer.

"It takes too long to do that," he said. **"The moment a signals intelligence unit or sensor picks up information that something is operating in the area, it needs to be passed to the next step in the process. You have to take it to the next level."**

An example of the next level is linking ground crews to Predator aircraft and then taking the same information and linking it to warplanning and targeting systems.

"We may ask a Predator to go look at hide sites. Perhaps, we have identified potential hide sites so we know where to look," he said.

"When we find it, it's not somebody on the ground that has found the target, it's somebody back at Langley AFB (Va.) or at Beale AFB (Calif.) that actually found it. With the data processing capability we have, we know where that is on a map with enough accuracy to hand it off to an air crew to start the targeting process."

General Peterson said this kind of technology was able to help the Air Force to locate and kill al-Qaeda terrorist leader Abu Mousab al-Zarqawi in early June.

"That is exactly what happened when we went after (Zarqawi)," he said. "We knew he was in the area. Because we knew to expect that kind of target to pop up, we placed a continuous string of aircraft in motion. We could have picked any of them to go prosecute the target. That's what warfighting integration is all about, moving from a manual, step-by-step approach with seams and gaps, to a continuous flow seamlessly moving from sensing, to acquiring, to finishing the target."

Warfighting integration is also about improving processes to reduce the number of people and the amount of time needed to do a job. During the 2006 Joint Expeditionary Force Experiment, or JEFX, at Nellis AFB, Nev., the Air Force was able to use an integrated database to plan air tasking orders. Combat planners were able to complete in 4½ hours what in the past took longer than 10. These kinds of efficiencies will ultimately reduce the number of people needed to do combat support, and represent a real cost savings to the Air Force, General Peterson said.

Also at JEFX, the general said war planners were able to use network connectivity to reduce the amount of time it took to correct inaccuracies.

"In the middle of the JEFX, we (got) a chat note from somebody at Hill AFB, (Utah). He says you 'fat fingered' the fuel load for the F-16 — we'd missed a zero. At that stage in the past, it would have been too bad. We would've had to fix it on the fly."

The error would have required a series of phone calls and messages to stop the chain of events once operational decisions are made and sent out to the force. Fixing the problem could go as far as contacting those at base level locations planning tanker flights and loading fuel onto the aircraft. It could take days to complete the paperwork to correct such a mistake. And if the error had been significant, it might have meant canceling a flight.

At JEFX, the use of an integrated database meant an incorrect number could be changed immediately and the changes would cascade down through the system to all affected parties. The mistake could be corrected on the spot and the mission would never be affected.

"When we changed the fuel load on that F-16, it changed every related factor and we didn't have to go back and do anything," he said. "We published the air tasking order without making another input. No problems. That is the sort of power you find when you get everybody on the same enterprise services bus. You can see information and you don't have to guess."

Part of warfighting integration is the creation of an enterprise-wide services bus, a kind of central connecting point for all the computer-based applications the Air Force uses. By using common services — keeping shared data in the same location, or using the same name for the same piece of data in different applications — all software will be able to share information seamlessly, eliminating the need for Airmen to manually move data from one system to the next.

By integrating software solutions, the Air Force expects to reduce the number of applications it uses from 19,000 to less than 10,000 during the next seven years.

BREAKING IT DOWN

"That is exactly what happened when we went after (Zarqawi). We knew he was in the area. Because we knew to expect that kind of target to pop up, we placed a continuous string of aircraft in motion. We could have picked any of them to go prosecute the target. That's what warfighting integration is all about, moving from a manual, step-by-step approach with seams and gaps, to a continuous flow seamlessly moving from sensing, to acquiring, to finishing the target."

Lt. Gen. Michael W. Peterson
Chief of Warfighting Integration and Chief Information Officer

Staff Sgt. Andrea Knudson / 51st FW PA

Lt. Col. Lars Hoffman, 5th Reconnaissance Squadron commander, reviews his checklist before flying the new U-2S Dragon Lady, Block 20, aircraft on its first flight from Osan Air Base, South Korea.

Reconnaissance mission soars to new heights with upgraded avionics

By Staff Sgt. Andrea Knudson
51st Fighter Wing Public Affairs

OSAN AIR BASE, South Korea — An improved U-2S Dragon Lady offering greater pilot awareness and improved safety arrived here June 14 as part of the Reconnaissance Avionics Modernization Program.

The program's goal is to improve the maintainability and reliability of the aircraft.

"The Block 20 aircraft is a new, modern cockpit with a computer on board that analyzes and displays a lot more information on three, 6-by-8-inch multi-function displays and two smaller displays," said Lt. Col. Lars Hoffman, 5th Reconnaissance Squadron commander.

"The (displays) can be configured for information pilots desire in the layouts they prefer," the colonel said. "Examples of information include altitude and navigation information, engine performance, moving map with mission course overlay, electronic checklists, diagnostic information on all aircraft systems and reconnaissance sensors, and multiple radio frequencies and settings."

Trading in an old-fashioned typewriter for a cutting-edge computer may better illustrate the upgrade from the Block 10 to the Block 20 aircraft.

"The Block 10 was a classic cockpit with round dials. Information was spread all around the cockpit and not easily readable by a pilot wearing a full pressure suit," the commander said. "This up-front design of the Block 20 makes it easier for the pilot to read information while flying an aircraft that always requires a pilot's full attention."

Pilots wear a full pressure suit and helmet, similar to those astronauts wear in space, because of the U-2's high-altitude mission.

The U-2, which has provided high-altitude reconnaissance for more than 50 years, has one of the highest mission completion rates in the Air Force despite the fact that the aircraft is one of the most difficult to fly because of its challenging takeoff and landing characteristics.

"It's a very complicated aircraft. Depending on configuration, you may need 10 to 30 people to launch the U-2," said Maj. Ramsey Sharif, a U-2 pilot from Beale AFB, Calif., who is temporarily assigned at Osan. "A mobile pilot is in charge of getting the pilot airborne and back on the ground. They act as a safety observer and ensure a safe launch and recovery."

The colonel said the U-2 is the most difficult to land aircraft in the Air Force inventory. The landing gear configuration is unique so the "chase car" concept is used. Typically, a second U-2 pilot, the mobile pilot, is designated as the mission's backup pilot who waits in a high-performance chase car at the end of the runway as the aircraft makes its landing approach. As the U-2 passes, the chase car follows it at high speed, with the "mobile" calling out the aircraft's altitude via radio to the pilot.

"The pilot must maneuver the aircraft to two feet above the runway, and then stall the wings to touch down tail-wheel-first," Colonel Hoffman said. "The pilot continues to keep the wings level as the aircraft slows to a stop and then allows one wingtip to touch the ground."

This makes for a total team effort operation. The U-2 community is a tight-knit group with fewer than 850 pilots since 1955.

"We're an operational squadron doing real-world missions," said Senior Airman Joshua Joyce, an avionics specialist with the 5th RS. "We're providing critical intelligence information to senior leaders."

The U-2 was specifically designed to carry reconnaissance payloads to extremely high altitudes. The Block 20 U-2 can carry thousands of pounds of reconnaissance sensors to more than 70,000 feet, and remain aloft for more than 10 hours.

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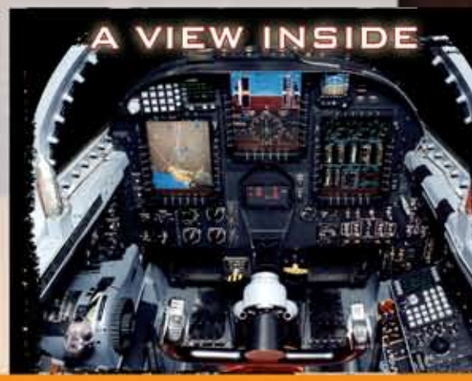
READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

- Situational awareness gives reconnaissance pilots the edge when traveling at 70,000 feet while also improving reliability.
- The U-2, which is designed to carry thousands of pounds of reconnaissance equipment, is powered by one General Electric F-118-101 engine, has a range of more than 7,000 miles and carries a crew of one.



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READABILITY BASED ON FLESH-KINCAID SCORES

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As network and bandwidth capabilities increase, the DoD is finding more ways to support the warfighter.

JARGON WATCH

STARS: Surveillance and Target Attack Radar System

PROTECTING GROUND TROOPS FROM 125 MILES AWAY, THE JOINT SURVEILLANCE AND TARGET ATTACK RADAR SYSTEM PROVIDES

TOP COVER

By Staff Sgt. Kevin Nichols
U.S. Central Command Air Forces Public Affairs

SOUTHWEST ASIA — High over Iraq, an E-8C Joint STARS aircraft surveys hundreds of miles of the country at a time, looking for insurgent activity, controlling those situations and taking action if needed.

Master Sgt. Lance Cheung / AFPN

Lt. Col. Jim Roman (right), talks with Army Sgt. 1st Class Steven Jamie about communicating to Army ground units. Colonel Roman is the crew commander and is in charge of the mission and decisions made aboard this E-8C Joint Surveillance and Target Attack Radar System aircraft. Sergeant Jamie is an airborne target surveillance supervisor and communicates with Army units using various communication devices.

The aircraft's crew ultimately keeps ground troops safer by communicating with convoys and directing air power to quell the enemy.

The Joint Surveillance and Target Attack Radar System mission has two parts. The first is to radio relay with convoys throughout Iraq. **Through radio and a text-messaging system, convoys can contact Joint STARS for help.**

Air National Guard Maj. Thomas Grabowski, senior director on the aircraft, is deployed from Robins AFB, Ga. He said the Joint STARS is the 911 call for convoys on the ground.

"So if one of these convoys gets in trouble — they break down, they have troops in contact, small-arms fire or any type of a problem — they call us," Major Grabowski said. "We're like the 'On-Star' for the ground commander."

The second part of the mission is to deter insurgent activity on Iraq's borders. Junior enlisted Airmen are in charge of the multimillion dollar radar attached to the bottom of the aircraft that zeros in on the enemy 100 to 200 miles away. Major Grabowski said the advanced system allows them to see the enemy without the enemy seeing them.

"Think about where you live at home and then think of a place 125 miles from that location. If you were to move out of your driveway and we were orbiting 125 miles away, we would see you move. So it's that advanced," the major said.

Joint STARS is truly a joint mission aircraft with Army, Air Force and Marine aircrew members. Air National Guard Airmen add total force flavor as well. Army Maj. Clifton Hughes, deputy mission crew commander, is also deployed from Robins. He said he works closely with Major Grabowski and the other Air Force folks on every Joint STARS mission.

"While the Army and Marines are keeping in close contact with convoy commanders, I can then coordinate with the Joint STARS Air Force assets on the aircraft to direct air support either as a show of force or to take out the enemy," he said.

A typical mission can last from 10 to 20 hours in flight after refueling in the air. The aircraft brings such a capability to the fight that many convoys won't go out on the road unless Joint STARS is airborne.

A total of $300 million worth of technology goes into this aircraft. The pay off is full-spectrum dominance and a reconnaissance capability that ensures peace of mind to U.S. forces on the ground that someone is always watching their backs.

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READABILITY BASED ON FLESH-KINCAID SCORES

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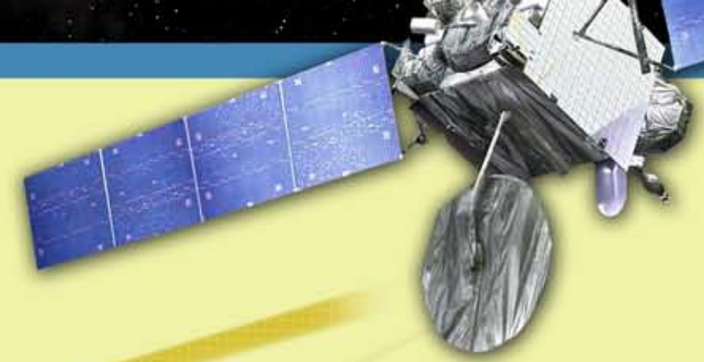
- Digital airborne communications will soon replace the antiquated systems of the past.

JARGON WATCH

- **OSA/VIP/SAM:** Operational Support Aircraft/Very Important Person/Special Airlift Mission
- **CSO:** Communications Systems Operator
- **IP:** Internet Protocol



FUTURE OF FLIGHT

By 2nd Lt. Austin Murphy
Air Force Communications Agency

SCOTT AIR FORCE BASE, Ill. — Communication technology has come a long way since the pre-dial tone telephone network of the 1950s.

This generation now thinks in terms of e-mails and text messages vs. hard copy memoranda and the fax machines that sent them. Everything is instantaneous, efficient, and fully integrated with the network.

But, one place where communication technology lags behind is in the airborne arena. This is due to the high cost of modifying aircraft and manufacturing flight-worthy networking equipment. **Airborne networking is advancing in the same direction as the terrestrial network, however, it's just moving a bit slower.** This gives communicators the unique advantage of foresight. They know what's coming down the pike and can prepare for it. That is specifically what the Integration Engineering directorate here at AFCA is doing.

Because the terrestrial network has made the shift toward digital networking systems that allow for better communications, the Air Force knows how to prepare for what is coming to the aircraft next.

Currently, users who are riding onboard the Operational Support Aircraft/Very Important Person Special Airlift Mission Fleet communicate through their own dedicated, analog link to the ground.

These individual links are difficult to maintain and easily lost. Also, the traffic that can be sent over these links is limited because they are narrowband channels and primarily analog. **In the very near future, airborne customers will be able to do so much more than have analog phone conversation and fax.** Once the shift is made from many narrowband communication pipes to one, ubiquitous, Internet Protocol-based connection to the ground, users will be able to pass data off of the aircraft akin to how they communicate when they are on the ground. Also, the type of data will not be restricted to basic phone and fax services. **IP-based communications can be anything, including integrated data, voice and video-over-IP that can be digitally encrypted for greater communications security.**

One of the biggest challenges with integrating digital communications onboard these aircraft is managing the different communications systems that are onboard each individual plane.

Currently, each plane in the OSA/VIP/SAM fleet has one or more Communications Systems Operators who manually monitor phone calls for quality, switch out communications links that have gone down with new ones and configure the aircraft radios for proper communications.

The goal of future airborne communications is to fully integrate each OSA/VIP/SAM aircraft with the Air Force networks, such as NIPRNET and SIPRNET and to create one IP-based net-centric communications link to the ground that would be able to provide all the services passengers are used to on the ground and at their desks.

By working closely with CSOs from Air Mobility Command, U.S. Strategic Command, the 412th Flight Test Squadron, the 89th Airlift Wing, and the Presidential Airlift Group, engineers here clearly defined the requirements needed to design the CSO station of the future.

The Software Maintenance Group at Hill AFB, Utah, and private-sector communications companies have worked closely with the CSO station design team by designing prototype software and will eventually deliver the prototype hardware solution with an overall goal to create a well defined template. This is so future acquisition programs can all share the standard solution for airborne communication systems management thus creating one standard station for CSOs to learn.

AIR FORCE SAVES MONEY, ACCOMPLISHES JOINT TRAINING BY GOING VIRTUAL

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READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

- Northern Edge 2006 is the first time the Air Force trains in a virtual environment with numerous commands around the nation.

JARGON WATCH

- **AWACS**: Airborne warning and control system
- **DMOC**: Distributed Mission Operations Center
- **DMO**: Distributed Mission Operations

Simulators networked for Alaska's Northern Edge 2006

By Capt. Nathan D. Broshear
505th Command and Control Wing Public Affairs

ELMENDORF AIR FORCE BASE, Alaska — The days of deploying an E-3 Sentry and other command and control aircraft to military exercises may soon be a rarity. With a large crew and an aging airframe, airborne warning and control systems, or AWACS, are expensive to deploy for a two-week training opportunity.

But thanks to powerful computer models and the ability to network simulators around the nation, Air Force and joint warfighters at Exercise Northern Edge 2006 are able to train with E-3 AWACS, E-8 Joint Surveillance Target Attack Radar System and EP-3 Aries aircraft without them actually going airborne.

Airmen of the 962nd Airborne Air Control Squadron here are flying virtual missions over Alaska. Meanwhile, Airmen from the 970th AACS at Tinker AFB, Okla., work as the exercise control at the Distributed Mission Operations Center, or DMOC, part of the 505th Distributed Warfare Group at Kirtland AFB, N.M.

Master Sgt. John White, an evaluator weapons director and reservist with the 970th AACS — the Air Force's only Reserve AWACS squadron — simulated bombers, fighters and helicopters flying over the Gulf of Alaska. His fleet of aircraft appears on screens around the Pacific region inside Air Force jets, Navy ships and at the air operations center at Hickam AFB, Hawaii.

"Live aircraft also are combined with a number of virtual entities to give an AWACS crew located in simulators at the 962nd AACS a realistic air picture," Sergeant White said. **"Instead of controlling a few dozen live training missions, they'll be operating in an environment that appears to be a massive air campaign."**

The exercise, which took place in June, is the first time a tactical-level DMO event was conducted with the Pacific Air Operations Center at Hickam AFB and the first time that Pacific Command has integrated DMO into joint training.

Capt. Kim Thompson, an air battle manager with the 970th AACS has been helping train Airmen from around the Air Force.

"Northern Edge '06 is the first time that we've trained in a virtual environment with a number of different commands and warfighting headquarters. Pacific Command, Alaska Command, Air Combat Command and Pacific Air Forces are all participating in this event," she said.

The line between real and simulated missions is being blurred, Captain Thompson said. The three virtual players are AWACS crews at Elmendorf AFB, JSTARS crews at Robins AFB, Ga., and Navy EP-3 crews working from Whidbey Island Naval Air Station in Washington. Data from these platforms and the DMOC is then fed into the air operations center at Hickam AFB.

"In a typical scenario, a Navy EP-3 crew in a simulator detected a DMOC computer-generated surface to air missile. Then an E-3 crew in a simulator at Elmendorf AFB used the unique AWACS communications links to task a real F-16 flying over the Alaskan ranges to destroy the threat," the captain said.

While training inside actual command and control aircraft won't disappear, Sergeant White believes exercises like Northern Edge '06 will serve to prove the value of combining live, virtual and constructive elements to give crews a wide range of training opportunities.

"When a crew is flying a real mission they have to contend with atmospherics, maintenance issues, long en route times to the training area, or simply the stress of deconflicting live aircraft," Sergeant White said. "**But DMO still allows us to get very high fidelity training without sending a lot of people (on temporary duty) or spending a lot of money burning jet fuel.**"

The cost savings is substantial.

"For a typical exercise deployment we may have to deploy 40 people," Sergeant White said. "But by using distributed mission operations, our team can train our entire 14-person mission crew with a much smaller footprint."

"Northern Edge '06 is the best of both worlds — live training enhanced with virtual aircraft to prepare the warfighter," he said.

A ROOM WITH A
VIEW

▲ Senior Airman Jennifer Manibusan makes a note about the day's flights with guidance from Senior Airman Anthony Michels in the air traffic control tower at Laughlin Air Force Base, Texas.

▸ Tech. Sgt. Rond Sampson uses a light gun to signal aircraft crossing the runway at Laughlin.

Photos by Staff Sgt. Jeremy Larlee / AFPN

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READABILITY BASED ON FLESH-KINCAID SCORES
FOG INDEX

- Laughlin is named after 2nd Lt. Jack Thomas Laughlin, a Del Rio native killed over Java in the South Pacific in the early days of World War II.
- In July 1993, the 47th Flying Training Wing realigned under the newly designated Air Education and Training Command, taking its place under 19th Air Force. Both headquarters are located at Randolph AFB, Texas.

Air traffic controllers, student pilots excel in busy air corridor

By Tech. Sgt. Ryan Mattox
Air Force Print News

DEL RIO, Texas — Just outside this small border town, with its low-key appearance and down-home lifestyle, Airmen control the Air Force's sixth busiest runway.

Airmen of the 47th Operations Support Squadron's air traffic control complex at Laughlin Air Force Base, Texas, operate in a unique training environment. They deal with student pilots, a shortage of air traffic controllers and flight safety concerns along the U.S-Mexico border.

Last year, air traffic controllers and student pilots generated more than 59,000 sorties from the base that is five miles north of the border. Laughlin pilots also racked up more than 89,000 flight hours, Chief Master Sgt. Zelda Montoya said. The chief is the squadron's chief of radar approach control.

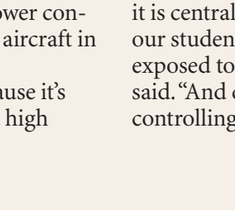
She said the complex, which consists of the air traffic control tower and the radar approach control facility, is also the fourth busiest in Air Education and Training Command with more than 258,000 aircraft passing through its air space annually.

The squadron manages the 47th Flying Training Wing's T-1 Jayhawk, T-6 Texan II and T-38 Talon trainers, as well as transient aircraft, and it assists with some aircraft that use nearby Del Rio International Airport.

Pilots buzzing above keep Laughlin air traffic controllers busy. They also create a hectic training environment for new air traffic controllers, the chief said.

Currently, there are 14 Airmen in various levels of training. But before they can become fully qualified and earn their five-level specialty badge, they will spend more than 11 months in training before moving on to handling live traffic without supervision, Chief Montoya said.

"We have a lot of training here — not just for pilots but also for our air traffic controllers," Chief Montoya said. "We maximize every opportunity to train. However, because you have student pilots and air traffic controllers training here, that makes for an atmosphere where you have to be very alert."



Airmen train in the tower and the radar approach control facility using various radar simulators, classroom training, training videos and local computer-based training to meet their stringent training requirements.

Air traffic control journeyman Senior Airman Anthony Michels has more than three years on the job. He's adapted to the workload at Laughlin.

"I love this job. It's fun and intense because every single day is different and challenging and you have a lot of responsibility," the Airman said. "I take pride in knowing that I can do this job."

Master Sgt. Daniel Comer, the squadron's chief controller, has many more years of experience. He is responsible for dealing with manning issues, facility management and making sure air traffic controllers are sharp and have what they need to do their job.

On each shift — at any given time — there is a minimum of one watch supervisor and three controllers plus trainees in the tower controlling the movement of aircraft in and out of Laughlin.

"It's different here because it's a pilot training base. It's a high operations tempo. We have a lot of traffic, lots of student pilots in and out, there is a high turnover, and it's a unique environment to work in," Sergeant Comer said. "At a normal base, you are dealing with experienced pilots. But here you have new pilots, three runways, high volumes of traffic -- so the rules are unique."

The sergeant said that to work with pilots at the beginning of their career instead of after they have more experience gives controllers a different perspective here. The experienced controllers pass on what they know to the new ones.

The pilots appreciate that.

Capt. Erick Pacheco is one of those pilots. A T-1 instructor pilot, he flies with the 86th Flying Training Squadron. For him, life at Laughlin consists of balancing additional duties and staying proficient in the air, and maintaining his credibility as an instructor. Laughlin's controllers help him achieve that balance.

"I think I've gained more self-confidence and situational awareness in a short amount of time here than I would have gained at a different assignment," Captain Pacheco said.

That's something for which he gives partial credit to the air traffic controllers. He also said flying at Laughlin is all about location and maintaining a good working relationship with air traffic controllers.

"It's a good location because it is centrally located, and it gives our students an opportunity to be exposed to different airspaces," he said. "And controllers do a good job controlling those three runways."

CLEAR SKIES

An EC-130H Compass Call flies a training mission over Lake Mead, Ariz. Compass Call is the designation for a modified version of the C-130 Hercules aircraft configured to perform tactical command, control and communications countermeasures. Specifically, the modified aircraft uses noise jamming to prevent communication or degrade the transfer of information essential to command and control of weapon systems and other resources. Modifications to the aircraft include an electronic countermeasures system, air refueling capability and associated navigation and communications systems.

Air Force photo

Capt. Jeff Baker patrols outside of Kandahar to detect radio interference. (below) 2nd Lt. Aaron Chen uses a radio detection finding unit to analyze the signal and locate its point of origin. All four team members are from the 85th Engineering and Installation Squadron, Keesler AFB, Miss.

OUR MISSION

"Imagine listening to your favorite radio station, when suddenly you begin hearing other voices on that station's frequency. After listening to the voices for a while, you determine the interference to be people using high-power walkie-talkies. It was our job to determine where those people were so the frequency conflict can be resolved."

—2nd Lt. Aaron Chen

Staff Sgt. Joshua Thornsberry listens for radio interference while (below) Staff Sgt. Justin Meyer tests for radio signals. The four members deployed last fall to Bagram and Kandahar Air Bases in Afghanistan as well as Al Udeid Air Base in Qatar.

Clear signals in Afghanistan

Team prevents radio interference

Army troops like these in Afghanistan relied on the expertise of an Air Force Engineering and Installation team who deployed to help keep them communicating clearly with each other.

Q&A

Source: AFCA/EA

ConstellationNet

Is ConstellationNet, or CNet, the same as C2 Constellation?

No. The C2 Constellation is an architecture within the Warfighting sub-enterprise. It deals primarily with command and control and intelligence, surveillance and reconnaissance mission areas within combat operations. The ConstellationNet, or CNet, on the other hand, deals strictly with communications and information IT infrastructure, services, and network operations. It's the computing and communications infrastructure that is employed by C2 Constellation mission systems and users.

In what way does the CNet support a service-oriented architecture approach?

As we migrate to a Service Oriented Architecture, the CNet Architecture will help define how "services" are validated, controlled, accessed, and managed. It will help define Key Interface Points, or KIPs, between Air Force and other systems/networks/services.

Are the other branches of service taking an approach similar to the Air Force?

They are similar in that they are using the DoD Architecture Framework to produce standard format products, but the scope, purpose, and viewpoint seem to vary. The LandWarNet (Army) and ForceNet (Navy) include warfighting missions and comm and info as well. Air Force leaders chose to separate the comm and info to facilitate aggregation of comm requirements instead of bringing a comm bill with every mission system. The Air Force CNet is broader in scope, and encompasses the entire breadth of the comm and info mission area (IT infrastructure, IT Core Netcentric Services, NetOps, Info Assurance) and covers us now through the year 2020 and beyond.

Can I build more secure systems using CNet?

Yes, if we implement Service Oriented Architecture and Enterprise Service Bus, we'll reduce the number of interfaces. Reducing the number of interfaces reduces risk because we have better configuration control and fewer points to protect.

Implementing policy-based management will help centralize/standardize policy enforcement across the network. XML tagging and content-based routing/content-based storage will allow us to control data distribution at the application level, not just the network or physical transport layer. XML tagging and Multi-Protocol Label Switching will allow for priority and precedence routing across the network so that we deliver the right data to the right place at the right time based on mission need.

Mediation and Transformation services will help ensure the data is provided in the right (user requested) format. XML tagging will help ensure data can be found (is discoverable). XML tagging and MPLS can also work to encrypt data at the application level instead of the physical layer so that we can use a "black core" to transport classified and unclassified data across a common media instead of physically separating the networks.

Policy Enforcement Points can determine what information an individual assigned to a Role can have access to on a case-by-case basis, instead of using group policies.

Does CNet accommodate capabilities such as Global Hawk?

There are support aspects for Unmanned Aerial Vehicles and Unmanned Combat Aerial Vehicles such as the Predator, the X-35 and the X-45. But, as of yet, there's not much on the Global Hawk specifically.

However, the requirements for command and control of the platform and for video distribution are being addressed.

What are the benefits of a CNet-based approach to IT systems development?

The hard part here is that in "the real world" you can't isolate variables to determine cause and effect. How much of the effect/impact is directly attributable to the architecture vs. some other variable(s)? We do know that within Air Force Communications Agency the architecture is being used to help perform capabilities-based portfolio management.

We map desired warfighting effects to required capabilities to portfolios to programs.

We look for capability gaps and duplication all along the way.

Another area where we have used the architecture is to support force transformation initiatives — the OV-5 operational activity model defines things we need to do to provide a net-centric information environment in the year 2012.

We then used the model to analyze the skills, tools, staffing, and organizational structure we will need.

We can also save thousands of hours and millions of dollars by realigning activities and operational nodes to the two Integrated Network Operations and Security Centers.

Air Force Gen. John P. Jumper Awards for Excellence in Warfighting Integration

- Outstanding Warfighting Integration Officer: **Lt. Col. Gregory E. Harbin**, 609th COS, Shaw AFB, S.C.
- Outstanding Warfighting Integration NCO: **Tech. Sgt. Keith Burba**, 62nd FIS, Yokota AB, Japan.
- Outstanding Warfighting Integration Civilian: **Albert J. Sautner III**, 36th IS, Langley AFB, Va.

Air Force Communications and Information Individual Award Winners

- Outstanding Field Grade Officer: **Maj. James R. Hoskins**, 609th ACS, Shaw AFB, S.C.
- Outstanding Company Grade Officer: **Capt. David M. Canady, Jr.**, 31st CCS, Tinker AFB, Okla.
- Outstanding Civilian Manager: **Robert J. Terry**, 43rd CS, Pope AFB, N.C.
- Outstanding Civilian Specialist: **Tracie L. Lacy**, HQ OSSG, Maxwell AFB, Gunter Annex, Ala.
- Outstanding Civilian Assistant Specialist: **Tammie S. Faitz**, HQ AMC, Scott AFB, Ill.
- Outstanding Civilian Technician: **Seiji Minei**, Det. 3, PACAF APS, Kadena AB, Japan.
- Outstanding Civilian Assistant: **Tarnetta C. Green**, HQ AFOATS, Maxwell AFB, Ala.
- Outstanding Communications-Electronics Systems Maintenance Senior NCO: **Senior Master Sgt. Cornelius F. McGillicuddy**, General George C. Kenney Headquarters, Hickam AFB, Hawaii.
- Outstanding Communications-Electronics Systems Maintenance NCO: **Tech. Sgt. Lawrence J. Bercel**, USAFE CSS, Ramstein AB, Germany.
- Outstanding Information Management Senior NCO: **Senior Master Sgt. Danny O. Ogas**, HQ AFCA, Scott AFB, Ill.
- Outstanding Information Management NCO: **Staff Sgt. Jacob A. Flores**, HQ AFMC, Wright-Patterson AFB, Ohio.
- Outstanding Information Management Airman: **Senior Airman Stepheno D. Pomerlee**, SOC, Maxwell AFB, Ala.
- Outstanding Communications-Computer Systems Senior NCO: **Master Sgt. Daniel V. Prater**, 89th CS, Andrews AFB, Md.
- Outstanding Communications-Computer Systems NCO: **Tech. Sgt. Carey E. Dvorak II**, HQ AFCA, Scott AFB, Ill.
- Outstanding Communications-Computer Systems Airman: **Senior Airman Larry C. Deardorff**, 43rd CS, Pope AFB, N.C.
- Outstanding Multimedia Senior NCO: **Senior Master Sgt. Donald S. Senger**, HQ USAF/IC, Air Force Pentagon, Washington, D.C.
- Outstanding Multimedia NCO: **Tech. Sgt. Richard N. Siers**, 37th CS, Lackland AFB, Texas
- Outstanding Multimedia Airman: **Senior Airman Patrick J. Dixon**, 1st CTCS, Charleston AFB, S.C.
- Outstanding Postal Service Senior NCO: **Master Sgt. Kenneth E. Bourns**, 374th CS, Yokota AB, Japan
- Outstanding Postal Service NCO: **Tech. Sgt. Peter M. Karajin III**, 82nd CSS, Langley AFB, Va.
- Outstanding Postal Service Airman: **Senior Airman Marquia S. Rivera**, Det. 3, PACAF APS, Kadena AB, Japan.
- Outstanding Electromagnetic Spectrum Manager: **Tech. Sgt. Robert C. Fisher, Jr.**, MNF-1 CIS, Camp Victory, Baghdad, Iraq.
- Outstanding Installation Spectrum Manager: **Tech. Sgt. Kenneth C. Bosshard**, 92nd CS, Fairchild AFB, Wash.
- Outstanding Information Assurance Professional: **Capt. Clifford W. Flowers**, USSTRATCOM/J6, Offutt AFB, Neb.
- Air Force Darryl G. Winters Award: **Staff Sgt. Suzanne M. Day**, 1st CTCS, Charleston AFB, S.C.

Team and Unit Award Winners:

- Outstanding Information Assurance Element: **Air Force Service Certifying Organization**, Lackland AFB, Texas.
- General Edwin W. Rawlings Team Award: **Crisis Response Team, 81st CS**, Keesler AFB, Miss.
- Maj. Gen. Harold M. McClelland Award: **3rd CCG**, Tinker AFB, Okla.
- Lt. Gen. Harold W. Grant Award: **379th ECS**, Al Udeid AB, Qatar.
- Outstanding Large Postal Facility: **35th CS, Misawa AFB PO**, Misawa AB, Japan
- Outstanding Small Postal Facility: **OL-C, Det. 2, PACAF APS**, Bangkok, Thailand.
- Outstanding Aerial Mail Terminal: **Det. 3, PACAF APS**, Kadena AB, Japan.

Air Force Association General Billy Mitchell Award for Communications and Information Excellence

- **Capt. David M. Canady, Jr.**, 31st CCS, Tinker AFB, Okla., was named as the person whose communications and information contributions most enhanced the Air Force's warfighting capability.

- A new award this year is the Airways and Air Communications Service Alumni Association Award. An independent award panel selected **Staff Sgt. Jacob A. Flores**, HQ AFMC, Wright-Patterson AFB, Ohio, as the person whose contributions most supported Air Force missions and operations and the warfighters. This award honors an Air Force communications and information airman from grade E1 through E5.

- The following are the Air Force nominees for the National Security Agency's Rowlett trophies: **Capt. Clifford W. Flowers**, USSTRATCOM/J6, Offutt AFB, Neb. , and the **Air Force Service Certifying Organization**, Lackland AFB, Texas.

The Air Force Communications Agency manages the awards program, which received 458 award nominations for individuals, teams and units. Each military individual award winner may wear the Air Force Recognition Ribbon, while civilian individual award winners may wear the Air Force Recognition Lapel Pin.

Photos by Eddie Edge / 507th ARW CS

▲ Senior Airman Phillip Hess, 35th Combat Communications Squadron, helps a student install a hard drive.
◀ Staff Sgt. Mark Chase instructs trainees from various units during a computer operations training known as Jump Start.

COMMUNICATIONS EXERCISE

JUMP START '06

Reserve communicators keep proficient on wide range of equipment

By Lt. Col. Rich Curry
507th Air Reserve Wing PA

TINKER AIR FORCE BASE, Okla. — Air Force Reserve communications specialists from across the country and one as far away as Ramstein AB, Germany, came here June 5-18 to participate in Jump Start '06 exercises.

Jump Start training provides specialized hands-on training for communicators through realistic scenarios with the equipment they would be supporting in the field.

"A major challenge for people in the communications field is to remain proficient in an ever increasing range of equipment," said Lt. Col Pete Peterson, 35th Combat Communications Squadron commander. "Our field is constantly changing as new technologies evolve. A lot of the equipment owned by the 35th CBCS is expensive and not every unit has the equipment we do. For some of the Airmen attending this training, this may be the first time they've operated equipment that they've only been able to read about in technical manuals."

It's because of equipment expense and changing technologies that AFRC began the Jump Start training in 2005. This is the second year in which AFRC has sponsored this training and the first hosted by the 35th CBCS.

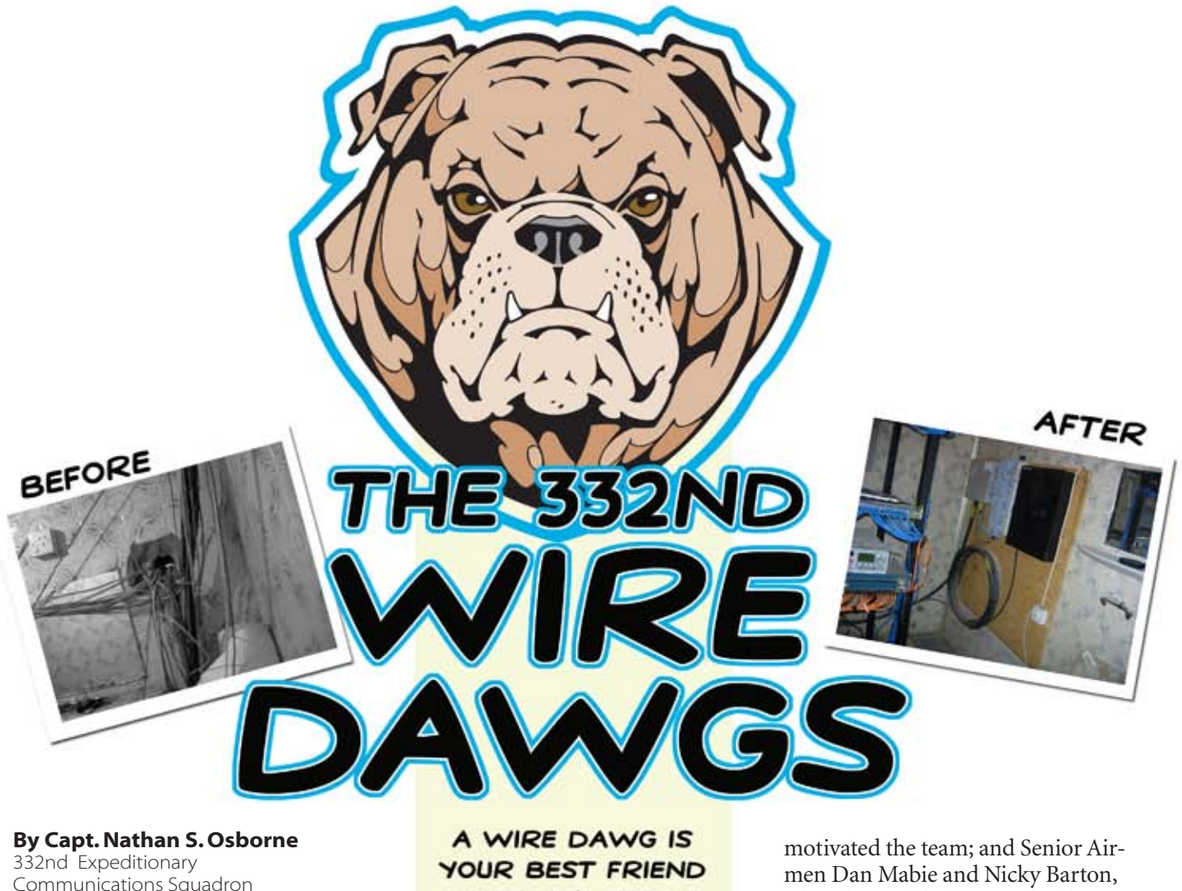
"By bringing reservists to the equipment to train and refine their abilities, we can certify the quality of their training. We're also improving the overall readiness of the communications field throughout the command," said Colonel Peterson.

Jump Start resulted because equipment expense and changing technologies prevented each unit from training properly.

For the approximately 34 Airmen, both officer and enlisted, attending the first week involved classroom academics covering networking processes, equipment set up, as well as studying operating systems first hand while completing a series of troubleshooting activities. Advances and new procedures in systems integration were discussed and practiced. Members also practiced with support equipment such as generators, cooling systems and tent construction.

The second week involved practicing what they had learned while operating during a realistic field training scenario.

"I believe everyone attending walked away from this event with a better understanding of the systems they would operate in the field and a stronger confidence in their ability to get the job done," added Colonel Peterson.



By Capt. Nathan S. Osborne
332nd Expeditionary Communications Squadron

BALAD AIR BASE, Iraq — In just 10 days, the "Wire Dawgs" of the 332nd ECS **pulled 15,000 feet of fiber optic and copper cable and installed $50,000 worth of equipment to** eliminate emissions security problems and improve the communications infrastructure of **332nd** Expeditionary Operations Group**.**

On top of the changeover in wiring for secure communications the entire nonsecure internet and phone wiring was removed and replaced.

Team members included Tech. Sgt. Anthony Russell, team leader; Staff Sgt. Stephen Elizondo and Senior Airman Guyton who painstakingly terminated 200 fiber connections; Tech. Sgt. Lisa Spicer, who truly motivated the team; and Senior Airmen Dan Mabie and Nicky Barton, who, along with Airman 1st Class Andrew Lower, became an indestructable force laying the foundation for all of the wiring in the building, and in many cases fabricating conduit for the entire project. Airman Lower became a one-man wrecking crew with the giant concrete drill, cutting 50 holes that were in some cases nearly three feet thick.

The project would have been a failure without the support of many other team members with supplies and network management. What would have taken most commercial teams three week to accomplish, these dawgs wired in record time.

A WIRE DAWG IS YOUR BEST FRIEND WHEN YOU NEED A JOB DONE AND YOU NEED IT DONE RIGHT. A WIRE DAWG IS A COMMUNICATOR WHO DOMINATES IN EVERYTHING THAT THEY DO. A WIRE DAWG LOVES FREEDOM. A WIRE DAWG HAS A NASTY BITE WHEN IT COMES TO ERADICATING TERRORISM. ABOVE ALL, A WIRE DAWG PROVIDES COMBAT AIR POWER FOR AMERICA RIGHT HERE, RIGHT NOW!

Radomes protect satellites, keep out prying eyes

Standardizing antenna control systems cuts training time and minimizes other supply issues

By 2nd Lt. Christopher Horner
55th Strategic Communication Squadron

OFFUTT AIR FORCE BASE, Neb. — The secret is out on one of the most important construction projects on base, and it ended with a cover up. Don't call the Inspector General yet, though. This cover up is designed to protect Offutt's two Defense Satellite Communication System antennas here.

Contractors completed work on the second of two large radomes enclosing the DSCS (pronounced "discus") satellite dishes June 2. The geodesic domes will help conceal the dishes' orientations from prying eyes, as well as keep rain, ice and wind off the sensitive equipment.

The radomes are transparent to radio waves, which means they can protect the satellite dishes from the elements without reducing their functionality.

"This upgrade was critical to continued C3 [command, control and communication] operations at Offutt," said Lt. Col. Alan Berry, 55th SCS commander. "The two large satellite systems were near the end of their projected 15-year lifespan."

Adding to the system's lifespan involved $20 million in upgrades over a two-year period. In addition to the radomes, the DSCS facility was completely refurbished with countless cables, new equipment racks and a new 38-foot satellite dish, all connected with the latest networking equipment and technology.

For more than 20 years the DSCS system has provided warfighters with secure command and control, voice, and data hotline capabilities. The two dishes communicate with DSCS III satellites located in orbit 22,500 miles above the Earth's surface.

The facility here provides the United States Strategic Command with critical communications capabilities and is an essential link in the nation's command and control capability. The upgrade will increase operational rates and decrease costs. As a cross-service DoD program, the upgrade will bring all DSCS sites to the same operational and capability level.

Achieving commonality throughout the DSCS world is a key objective of the upgrades.

By standardizing the antenna control systems, the 55th SCS DSCS work center has cut out 10 weeks of qualifying training tasks. Squadron leaders also hope to minimize supply issues.

8 15
READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

A two-year project upgrades Offutt's systems and protective satellite dish coverings.

JARGON WATCH

DSCS: Defense Satellite Communications System

GLORY & HONOR

Airman 1st Class Nikolaos Pitas, one of the 250-person Air Force Honor Guard team members, posts the American flag during a change of command ceremony at Dover AFB, Del. The Honor Guard's primary mission is to render military honors for Air Force personnel and their family members during funeral services at Arlington National Cemetery.

Jason Minto / 436th CS

TIME MACHINE

SIGNAL CORPS GOES WIRELESS

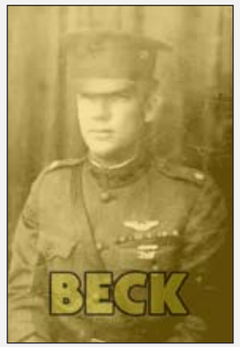
By Gerald Sonnenberg
AFCA Public Affairs

SCOTT AIR FORCE BASE, Ill. — There is a saying that some people aren't talented enough to walk and chew gum at the same time. Ever try tapping a difficult rhythm on a tabletop with one finger, while flying a fragile, early 20th century aircraft made of canvas and wood? That's what pilots in fledgling air forces around the world often did before the advent of voice communications.

The years 1900 to 1915 have been referred to by some as "the golden age of the spark transmitter." The discharge of a spark across a gap caused by the pressing of a telegraph key generated the electromagnetic waves that relayed messages.

Guglielmo Marconi, an Italian inventor, proved the achievability of radio communication when he sent the first successful transatlantic radiotelegraph message to Newfoundland in 1902. It was then that wireless telegraphy came into its own as ships became equipped with the revolutionary devices. Wireless technology was simple and mobile. It also eliminated the need for miles and miles of wire and telegraph poles that could be cut by people or damaged by weather.

The U.S. Army Signal Corps established wireless stations in key locations across the country and supplied wireless sets for



Army transports, cable ships, harbor tugs, and mine layers. In 1911, a 29-pound mahogany wireless equipment box, with a telegraph key on the top, sat upon the lap of Lt. Paul Beck. He was a passenger sitting next to the pilot of the Army's new Wright Aeroplane. The aircraft flew 55 mph at about 500 feet. Lieutenant Beck sent two signals using the equipment that were picked up "clearly" 40 miles away.

Aircraft were primarily used for reconnaissance throughout World War I. However, instead of a large box, technology provided a way to strap the telegraph key to a pilot or copilot's leg. Telegraph signals were not secure because anyone with a receiver could pick up transmissions, and it was nearly impossible to hear messages because of aircraft engine and wind noise. However, the technology remained essential throughout World War I as pilots tapped out messages to provide quick information about enemy movements.

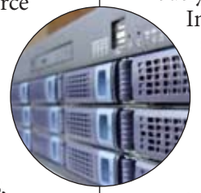
Now that's talent.

NEWS BRIEFS

AFNETOPS

AF CONSOLIDATES NETWORK OPS

AIR FORCE OFFICIALS have formally consolidated the service's network operations and created the Air Force Network Operations, or AFNETOPS, Command structure at 8th Air Force, Barksdale AFB, La., July 5.



The move is part of a larger Air Force reorganization of its network operations structure designed to better support the warfighter. It puts all Air Force units charged with network operations under the command of a single commander, Lt. Gen. Robert J. Elder Jr., 8th Air Force and AFNETOPS commander.

"Previously, we had commands focused on air and space forces, but no command focused on operations in cyberspace. That's what we're going to provide here," said the general. "In addition to increased effectiveness, AFNETOPS Command will achieve significant efficiencies for network operations, providing personnel savings to help realize Air Force recapitalization."

In addition to the formal recognition of the AFNETOPS command structure, Air Force officials also consolidated the Network Operations Security Centers, or NOSCs. Those responsibilities were previously decentralized among 10 Major Command NOSCs.

Capabilities now are consolidated under the 67th Network Warfare Wing, previously the 67th Information Operations Wing, at Lackland AFB, Texas.

The wing will oversee the stand-up of two Integrated Network Operations and Security Centers, or I-NOSCs, located at Langley AFB, Va., and at Peterson AFB, Colo., consolidating the former duties of the major command NOSCs. *—Capt. Carla Pampe, 8th AF/PA*

KUDOS

407TH AEG TEAM SOLVES COMM PROBLEMS IN IRAQ

A TEAM OF EXPERTS WITH the 407th Expeditionary Communications Squadron in Iraq provides one-stop service to customers with communications problems and requirements — getting the right people on the job to fix the issue quickly.

Staff Sgt. Cidelia Hagan checks kits during an inventory at Ali Base, Iraq.

"The communications focal point acts as a maintenance operations center, help desk and unit control center, as the situation dictates," said Master Sgt. Jeffery Steagall, 407th ECS communications focal point, or CFP, superintendent. "We track network, telephone and radio outages, and work with the appropriate people to ensure that leadership knows about those outages."

This one-stop shop drives the process to ensure that senior leaders' communications requirements are met and to track down the specialists needed to fix problems as they arise, he said. But senior leaders, although customers, are not the only focus for this team.

One team member, Staff Sgt. Cidelia Hagan, deployed from Tinker AFB, Okla. , said, "I'm responsible for assisting unit client support administrators with computer issues they can't solve. I also create user accounts for classified and unclassified computer systems.

"My favorite part of the job is fixing something small on my end that results in a large resolution for my customer. It is a little challenging to work in a high visibility job, though. It leaves little room for mistakes." *—Master Sgt. Andrew Gates, 407th AEG PA*

TACTICAL ANTENNA

Airman 1st Class Julianne Trulson / 435th CS

Airman First Class James McCrea, Ground Radio Maintenance, 1st Combat Communications Squadron, assembles a tactical antenna to ensure all the necessary elements are present after a temporary duty assignment to Ramstein Air Base, Germany.

KUDOS

RESEARCH BUILDS BETTER C2 NET

DURING A RECENT command and control, or C2, training exercise, at the 505th Communications Squadron at Hurlburt Field, Fla., broadcast network traffic could not be transmitted through Internet Protocol TACLANE encryption devices.

After intense research, Brad Frank, a contractor in the 505th CS, discovered a way to allow mission-critical C2 data to be transmitted in broadcast format. This capability saved the 505th CCW $2 million in hardware and $80,000 in annual maintenance costs.

Along with saving resources, Mr. Frank's discovery brought a myriad of advantages to information transmission within the wing.

It enabled Ethernet broadcast traffic to be encapsulated into an IP packet that could be transported across a multi-point routed network. This feat was never before achieved with a TACLANE device. Second, as an encapsulation technology, L2TPv3 used minimal processor overhead, which drastically reduced operational and maintenance costs. Also, by incorporating a common platform for interconnecting networks, less hardware was required to pass traffic saving more than $2 million in expense. Lastly, the versatility of vital C2 systems was drastically improved.

Mr. Frank wrote a white paper regarding the discovery and its capabilities at the 505th CCW homepage: **https://505ccw.hurlburt.af.mil/505trg/505cs/scm.htm.**

— Kyle Murphy, 505th CS

ROCKET LAUNCH

Brian Gavin / 30th SCS

A Delta IV rocket carrying a payload for the National Reconnaissance Office lifts off from Space Launch Complex-6 at Vandenberg AFB, Calif., June 27. The NRO is the agency responsible for developing and operating the country's fleet of spy satellites. The Vandenberg launch site allows rockets to fly southward for delivery of spacecraft into orbit around Earth's poles for coverage over most of the planet's surface. Cape Canaveral is best suited for launches headed eastward to reach equatorial orbits.

SYNCHRONIZE

ARMY, AF PLANS FOR NETWORK MODERNIZATION ARE SIMILAR

AIR FORCE AND ARMY officials say their plans for network modernization are similar to one another.

Army Lt. Gen. Steven Boutelle, the Army Chief Information Officer, and Lt. Gen. Michael W. Peterson, Air Force Chief of Warfighting Integration and Chief Information Officer, spoke at a conference for information technology professionals July 11.

Across the Department of Defense, the services are working to synchronize their respective operational and support networks. Eventually, the services' individual networks — the Army with "LandWarNet," the Air Force with "ConstellationNet," and the Navy with "FORCENet" — will all be tied together as part of DoD's Global Information Grid, or GIG, expansion project.

The GIG expansion project aims to bring increased bandwidth to all areas of the military — aircraft, foxholes, special forces and sustaining bases. That type of integration requires each service to ensure their portions of the GIG are compatible. The services have agreed to run their networks with an "internet protocol," or IP, architecture. That was one message the two generals had for civilian industry leaders who will in all likelihood be responsible for constructing those military networks.

Another message was that implementation of the GIG, the "transport," would bring a whole new spate of problems involving data synchronization, but solving the data synchronization problem is something experts will have to work on. *— Staff Sgt. C. Todd Lopez, AFPN*

CIVILIAN FOCUS

66,000 CIVILIANS TRANSFER TO NSPS BY JANUARY

The performance appraisal cycle for Spiral 1.2 employees begin on the actual day of their conversion to NSPS and continue through Sept. 30, 2007. These employees will receive their first performance pay increase in January 2008.

THE DEFENSE DEPARTMENT IS transferring more than 66,000 additional DoD civilian employees into the new National Security Personnel System beginning in October.

The plan ushers in the second phase in implementing the new pay-for-performance personnel system and affects organizations throughout DoD.

The first 11,000 DoD civilian employees were converted to the new system under "Spiral 1.1" of the phase-in on April 30.

Mary Lacey, NSPS program executive officer, recently met with senior leaders from the Spiral 1.1 transition to identify what worked well and what improvements are needed.

Officials reported a 99.9 percent accuracy rate in completing affected employees' personnel actions and no glitches in processing their pay through the Defense Finance and Accounting Service.

"We are pleased with what we are seeing thus far, at least with the technical aspects of the conversion," Ms. Lacey said.

The Spiral 1.2 roll-in will take place over a four-month period through January 2007, and will include civilian employees from organizations throughout DoD, including some overseas.

Affected components will have the discretion to convert their workforce any time between October 2006 and January 2007 to ensure enough time to train their employees, Ms. Lacey said. Ultimately, the system will apply to more than 650,000 DoD civilian employees.

Employees being converted to the new system will receive new performance plans that are clearly linked to their organization's mission and strategic goals. They also will be converted to pay bands that replace the grade ratings under the general schedule.

Officials emphasized that no employee will lose pay during the conversion to NSPS. Most will receive an initial pay bump to account for time already earned toward their next within-grade increase.

A conversion tool in the NSPS 101 course, posted on the NSPS Web site, helps employees estimate the value of their within-grade-increase, as well as their career group and pay band under the new system.

The ongoing NSPS conversion includes only the human resources parts of the system, which include job classification, compensation, performance management, staffing and workforce-shaping elements.

It does not include elements of the new system involving labor relations, collective bargaining, independent third-party review, adverse actions and the National Security Labor Relations Board.

DoD and the Office of Personnel Management have appealed a late February court decision blocking implementation of these provisions.

U.S. District Judge Emmet Sullivan ruled that they would fail to protect civilian employees' ability to bargain collectively. The decision was based on a lawsuit filed by the American Federation of Government Employees and 12 other labor unions.

Defense officials hope for a decision on the appeal by the year's end as they continue implementing parts of the new personnel system not caught up in litigation. *— AFPN*

To find out more information about the pay pool process and to estimate your pay increase, check out: **www.cpms.osd.mil/nsps/**

SUPPORT THE TROOPS WITH PHONE, GIFT CARDS

Available to the public since April 2004, "Help Our Troops Call Home" allows anyone, even non-authorized exchange customers, to send a Military Exchange Prepaid phone card to troops deployed for Operations Enduring and Iraqi Freedom. Since the program began, more than 100,000 orders have been processed.

In addition to phone cards, people can also send a "Gift from the Homefront" gift certificate. The gift certificates, available in denominations of $5, $10, $20, $25 and $50, are redeemable at any AAFES facility worldwide, including more than 50 PXs/BXs. More than 65,000 "Gifts from the Homefront" gift certificates have been distributed to troops in OEF/OIF since the program began in March 2003.

Those wishing to send "Gift From the Homefront" gift certificates or calling cards can log on to www.aafes.org. From there, the gift certificates and phone cards can be sent to an individual service member or distributed to "any service member."

F-35 JOINT STRIKE FIGHTER

HELMET MOUNTED DISPLAY

What is it?

The F-35 helmet is essentially replacing the conventional heads-up display in the fighter cockpit. When flying an F-16, for example, there's a heads-up display in front of the pilot that provides all the primary flight reference and weapons information. With the Joint Strike Fighter helmet, pilots will have the capability to view critical information anywhere they look outside the aircraft, not just directly in front of them. A test was designed to study risk reduction while wearing a helmet mounted display.

How does it work?

With a traditional heads-up display, the pilot can reference flight and attack information in one spot, look around without any kind of obstruction, see what they want to see real world, and then come back to the heads-up display. With the helmet, the pilot has the information in his field of view at all times, unless it's turned off. The Joint Strike Fighter helmet system uses the normal heads-up display symbology when the pilot is looking straight ahead, but a tracker senses when the pilot looks away from the centerline and signals the display to turn off some information or turn on other information.

Overcoming challenges

Getting it right presented a special challenge. The Joint Strike Fighter simulators used weren't equipped for a helmet, and the actual Joint Strike Fighter helmet wasn't available, so the team had to integrate a commercially available helmet into the simulator.

The team integrated, in a very short time, the commercial helmet to look at helmet-mounted display risk-reduction projects. They didn't wait for a real flight-worthy helmet to come from Lockheed, and were able to conduct this risk-reduction research. This can possibly save the program money down the road by identifying some of the constraints of the system early on.

What's ahead?

With the helmet ready to go, the team can work out issues now by integrating the helmet into the representative cockpit.

For now, this is a risk-reduction test. The team is taking this early look at symbology to ensure they're heading in the right direction. Early testing of this capability to display all this information just inches from the pilots' eyes will pave the way for testing the production helmet inside the actual airframe.

Source: Christopher Ball / 95th Air Base Wing Public Affairs

ABOVE, CAPT. CHRIS JENKINS, PILOT VEHICLE INTERFACE LEAD FOR THE F-35 JOINT STRIKE FIGHTER PROGRAM INTEGRATED TEST FORCE, TRIES ON THE COMMERCIALLY AVAILABLE HELMET-MOUNTED DISPLAY HIS TEAM ADAPTED FOR USE WITH THE JOINT STRIKE FIGHTER SIMULATOR AT EDWARDS AFB, CALIF.

intercom

Journal of the Air Force C4ISR community ★ August 2006

"Today, (a) Soldier, Marine or an Airman on the ground can look at a terminal and watch what a Predator is observing from overhead. "(They) can also talk to an AC-130 gunship. The gunship can see what is happening on the Predator. Before it even arrives on scene, the gunship has situational awareness. This has changed things dramatically."

– Lt. Gen. Michael W. Peterson
Chief of Warfighting Integration
and Chief Information Officer

Aircrew Communications

KEEPING THE AIR FORCE CONNECTED FROM THE GROUND TO THE STRATOSPHERE

WARFIGHTING INTEGRATION ★ ON THE EDGE OF SPACE ★ JSTARS
GOING DIGITAL ★ GOING VIRTUAL ★ A ROOM WITH A VIEW